Files

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
CENTRAL STATES FOREST EXPERIMENT STATION

ADDRESS REPLY TO
DIRECTOR
AND REFER TO

OHIO STATE UNIVERSITY,
COLUMBUS, OHIO

R - CS
Publications
Station Notes ~~F~~ 13

August 22, 1934.

Dear Sir:

Enclosed herewith are volume tables of plantation black locust prepared by L. F. Kellogg in the form of Station Notes. Number 13 gives the contents of black locust trees in numbers of 7-foot fence posts of various sizes, and Number 14 gives the contents in numbers of 4-foot bolts, in which form black locust is commonly utilized. The total merchantable board foot volume of the bolts is also given. Users of these tables should note that the total contents of a tree are given either in 4-inch, 5-inch, or 6-inch posts, whereas the bolt table gives the total number of bolts of all sizes. For example, Table No. 13 shows that a black locust 10 inches in diameter and 40 feet tall will yield 6 4-inch posts, or 4 5-inch posts, or 2 6-inch posts; table No. 14 gives the contents as 1 8-inch bolt, 1 7-inch, 1 6-inch, and 1 5-inch, or a total of 4 bolts.

Other volume tables of plantation black locust have been prepared, as mimeographed Station Notes in order to make them immediately available, as follows:

No. 7 Total volume in cubic feet.
No. 9 Merchantable volume in board feet - International Rule.
No. 10 Merchantable volume in board feet - Scribner Rule.
No. 11 Merchantable volume in cubic feet.

These and other Station Notes issued from time to time as current progress reports of studies and investigations of the Central States Forest Experiment Station are available for distribution upon request.

Sincerely yours,

Willis M Baker.

WMB/CH
Enc.

Willis M. Baker,
Director.

U. S. Department of Agriculture - Forest Service
CENTRAL STATES FOREST EXPERIMENT STATION
Columbus, Ohio

Station Note
No. 13

Preliminary Table
of
POST CONTENTS
Plantation BLACK LOCUST
(Robinia pseudoacacia, Linn)
Central States Region

July 15, 1934

L. F. Kellogg

1934 Post Length: 7 Feet 1/
Minimum Diam.of post:4in.2/ D.I.B.

D.B.H. of Tree	Total Height	Contents of tree in ROUND or Equivalent SPLIT Posts 3/			D.B.H. of Tree	Total Height	Contents of tree in ROUND or Equivalent SPLIT Posts 3/		
		4" d.i.b.	5" d.i.b.	6" d.i.b			4" d.i.b.	5" d.i.b.	6" d.i.b.
Inches	Feet	No.	No.	No.	Inches	Feet	No.	No.	No.
6	30	1	--	--	12	40	9	6	3
	40	1	--	--		50	12	7	4
	50	2	--	--		60	16	9	5
	60	2	--	--		70	20	11	6
7	30	2	1	--		80	24	14	7
	40	2	1	--		90	28	16	9
	50	3	1	--	13	60	20	12	7
	60	3	2	--		70	24	14	8
	70	4	2	--		80	28	17	9
8	30	3	1	--		90	32	20	11
	40	4	2	1	14	60	23	14	8
	50	4	2	1		70	28	17	10
	60	5	3	1		80	33	20	12
	70	6	4	1		90	38	24	13
9	40	5	3	1	15	60	26	16	10
	50	6	3	2		70	32	20	12
	60	8	4	2		80	39	25	14
	70	10	5	3	16	60	30	19	11
	80	11	6	3		70	37	23	14
10	40	6	4	2		80	45	28	17
	50	8	5	2	17	60	33	22	13
	60	11	6	3		70	42	26	17
	70	13	7	4		80	52	32	20
	80	16	9	5					
11	40	7	5	2	18	60	38	25	15
	50	10	6	3		70	48	30	19
	60	13	7	4		80	58	36	23
	70	17	9	5	19	70	54	33	22
	80	20	11	6		80	66	40	26
	90	23	13	7	20	70	60	37	25
						80	73	44	29

1/ Posts of $7\frac{1}{2}$, 8 and 10 feet are sometimes cut.

2/ The 4-inch class includes posts 4.0 to 4.9 inches in diameter measured at the small end, including sap; the 5-inch class all posts 5.0 - 5.9 inches; etc. Smaller posts are frequently cut for home use. As in the case of most volume tables, no allowance has been made for cull.

3/ Conversion factors used in reducing large sized cuts to their equivalent in 4, 5, or 6-inch posts:

Split Post Size :	Diameter at Small end of Round post cuts															
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Inches	Equivalent Split Posts - Number															
4	1	1	2	3	4	5	6	7	8	10	12	14	16	18	20	22
5	-	1	1	2	2	3	4	5	5	6	8	9	10	11	13	14
6	-	-	1	1	1	2	2	3	4	4	5	6	7	8	9	10

Prepared by division of diameters (expressed as basal area) by the b.a. of 4, 5, and 6 inches respectively. Additional fractions of posts eliminated, for conservatism.

The table was constructed from taper curves based on 396 stem measurements taken in Indiana, Illinois and Ohio, and prepared by the F. S. Baker method of subordinate form quotients. The averages were made on heights at percentile diameters rather than on diameters at given heights. From the final taper curves, post-cuts 7 feet in length above a 0.5 foot stump were scaled and the diameters at the small end of each were taken. Fractional inches were rounded off to the next lower inch class for conservatism. The contents of each post-cut in 4, 5, or 6 inch posts as calculated using the values in footnote 3 above. For each size, curves of number of posts over D.B.H. by height classes, and then over height by D.B.H. classes were prepared to smooth off irregularities. No cognizance was taken of posts from forks or limbs.

No opportunity has come to check this table against actual post cutting operations. Anyone having such an opportunity can give material service by comparing tabular values with those secured by careful utilization in trees of the same D.B.H.-height classes. This Station will appreciate such checks and criticism of this table.

This is the fifth of several volume tables for plantation black locust. As other tables are completed, they will be issued immediately in this form in order to avoid delay in making them available for use.